

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JACOB EMERT, ROBERT D. LUNDBERG
and MALCOLM WADDOUPS

Appeal No. 1998-1213
Application 08/450,506

ON BRIEF

Before PAK, OWENS and LIEBERMAN, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of claims 27, 30-33 and 56-69, which are all of the claims remaining in the application.

THE INVENTION

Appellants claim a fuel composition which includes a liquid petroleum fuel and an oil soluble dispersant comprising an oil soluble reaction product of a recited hydrocarbyl

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substituted C₄ to C₁₀ dicarboxylic acid producing material and a specified basic reactant. Claim 27 is illustrative and reads as follows:

27. A fuel composition comprising (i) a liquid petroleum fuel and (ii) an oil soluble dispersant comprising an oil soluble reaction product of a reaction mixture comprising:

- (a) a hydrocarbyl substituted C₄ to C₁₀ dicarboxylic acid producing material formed by reacting olefin polymer of C₂ to C₁₀ monoolefin having a number average molecular weight of about 1500 to 5,000 and a C₄ to C₁₀ monounsaturated acid material, wherein the substituted material has a functionality ratio of from about 1.05 to 1.25 dicarboxylic acid producing moieties per molecule of said olefin polymer used in the reaction; and
- (b) a basic reactant selected from the group consisting of polyamine, polyhydric alcohol, amino alcohol and mixtures thereof.

THE REFERENCE

Meinhardt et al. (Meinhardt)	4,234,435	Nov. 18,
1980		

THE REJECTION

Claims 27, 30-33 and 56-69 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Meinhardt.

OPINION

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We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, we reverse this rejection.

In order for a claimed invention to be anticipated under 35 U.S.C. § 102(b), all of the elements of the claim must be found in one reference. *See Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 1576, 18 USPQ2d 1001, 1010 (Fed. Cir. 1991).

Appellants' claims require a fuel composition which includes an oil soluble reaction product of the recited dicarboxylic acid producing material and basic reactant. The examiner argues that Meinhardt teaches that the acylating reagent itself, i.e., the dicarboxylic acid producing material, can be used as an additive for lubricant and fuel compositions (col. 19, lines 53-55), and that Meinhardt teaches at column 44, lines 61-64 that the acylating reagents

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can be reacted with polyamines and/or polyhydric alcohols. The portion of the reference relied upon by the examiner for the second of these teachings, however, pertains to mineral oils (col. 44, line 61 - col. 45, line 10). The examiner has provided no evidence that one of ordinary skill in the art would have interpreted the term "mineral oils" to include fuels. Moreover, throughout the reference, Meinhardt refers to the reaction products of the acylating reagents and polyamines

and/or polyhydric alcohols as being additives for lubricants. Consequently, we find that the examiner has not carried the burden of establishing a *prima facie* case of anticipation of appellants' claimed invention over Meinhardt.

Also, for the following additional reason, we find that a *prima facie* case of anticipation has not been established by the examiner.

Appellants' claims require that the hydrocarbyl substituted dicarboxylic acid producing material has a

functionality ratio of from about 1.05 to 1.25 dicarboxylic acid producing moieties per molecule of olefin polymer used in the reaction. The "used in the reaction" phrase indicates that the functionality ratio is based on the total of both the reacted and unreacted polyolefin (specification, page 8, lines 17-22). Meinhardt's acylating agent has within its structure an average of at least 1.3 succinic groups for each equivalent weight of substituent group, wherein the substituent group is derived from a polyalkylene (col. 3, lines 52-61; col. 4, lines 18-20).

Appellants argue that Meinhardt's ratio, like appellants' ratio, is a functionality ratio, rather than being a succination

ratio, and is different in quantity than appellants' functionality ratio (brief, pages 5-6). A succination ratio differs from appellants' functionality ratio in that the succination ratio is based upon only the reacted polymer, i.e., that which is substituted with succinic groups (brief,

page 5).¹ Thus, a succination ratio is equal to the functionality ratio if all of the polymer reacts, and otherwise is greater than the functionality ratio (brief, page 6).

To decide the issue of anticipation we need not make a finding as to which ratio Meinhardt discloses because, first, if Meinhardt's ratio is a functionality ratio, it is different in quantity than that recited in appellants' claims and, therefore, Meinhardt does not anticipate appellants' claimed invention. Second, even if Meinhardt discloses a succination ratio, it would not be possible to calculate the corresponding functionality ratio because there is no disclosure in Meinhardt of the fraction of the polymer which is substituted with succinic groups. Thus,

it would not be possible to determine whether Meinhardt anticipates appellants' claimed invention.

¹The formulas for calculating a functionality ratio and a succination ratio are shown in appellants' brief (pages 5-6).

The examiner appears to argue that 1) Meinhardt's examples upon which appellants' calculated functionality ratios of 1.55 to 1.69 (brief, page 5) are based have polyolefin:dibasic acid ratios of about 1:2, 2) Meinhardt teaches that the polyalkylene:acidic reactant ratio can be at least 1:1.5 (col. 17, lines 28-30), 3) multiplying, say, appellants' calculated 1.64 functionality ratio by 1.5/2 gives 1.23, which falls within appellants' recited functionality ratio range of about 1.05 to 1.25, and 4) therefore, Meinhardt anticipates appellants' claimed invention (answer, page 5). This argument is based upon functionality ratio, which is calculated using the formula on page 5 of appellants' brief, being directly proportional to charge ratio regardless of composition, and the examiner has not established this relationship. The examiner, therefore, has not shown that each limitation of the invention recited in any of appellants' claims is disclosed in a single reference. Consequently, the examiner has not established a *prima facie* case of anticipation of appellants' claimed invention.

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DECISION

The rejection of claims 27, 30-33 and 56-69 under 35
U.S.C. § 102(b) as being anticipated by Meinhardt is reversed.

REVERSED

CHUNG K. PAK)	
Administrative Patent Judge)	
)	
)	
)	BOARD OF PATENT
TERRY J. OWENS))
Administrative Patent Judge)	APPEALS AND
)	
)	INTERFERENCES
)	
PAUL LIEBERMAN))
Administrative Patent Judge)	

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